
Overview

This sub discipline covers the core competencies required to create software to address the needs of business problems and opportunities, resulting in a variety of software solutions, ranging from operating and control software to web based or specialist applications, such as accounting software and games software.

Development activities produce software that translates the design deliverables from HCI design, data design and software design, into working software. These designs will include, at a detailed level, functions and processing, interfaces, data handling and storage needs and how the system will be used by and interact with people, as appropriate. Development involves the translation of the designs into working software solutions that meet the business needs.

There is a wide range of software development activities that may be undertaken in a variety of environments appropriate to both the business and technical contexts in which they will be used, The software development environments used will be selected and specified during the design phase when the physical models are produced.

In some organisations, software development may be undertaken as part of a holistic life cycle approach where one individual or team may complete all stages; whereas in other organisations, each stage of development may be undertaken by individuals or teams or as part of projects and/or programmes.

Performance criteria

Design and develop the software development infrastructure

You must be able to:

- P1 Design, implement and maintain organisational strategy, procedures, standards, tools and techniques for software development activities
- P2 Design, implement and maintain organisational strategy, procedures, standards, tools and techniques for monitoring software development activities
- P3 Design and implement strategy, policies, plans and standards to ensure the alignment of software development activities with any relevant Legislation, regulation and external standards
- P4 Advise others on which development environments and programming languages are to be used within the organisation
- P5 Advise others, both internally and externally, on best practice in software development activities and their deliverables

Manage software development projects and programmes

You must be able to:

- P6 Take action to resolve issues escalated by less experienced individuals relating to the alignment of testing, integration and implementation activities with software development activities
- P7 Advise on actions to be taken in the event of software development activities being out of alignment with the business needs, as they are represented in software design deliverables
- P8 Advise on actions to be taken in the event of software development deliverables being out of alignment with IT architecture models and software roadmaps
- P9 Secure sign off of software development deliverables from sponsors and stakeholders
- P10 Authorise actions to be taken in the event of software development deliverables being out of alignment with IT architecture models and software roadmaps, following advice from superiors
- P11 Liaise as appropriate with external bodies on all aspects of software development activities

Manage the software development infrastructure

You must be able to:

- P12 Review the alignment of software development activities with any relevant legislation, regulation, external standards, strategy, policies, plans and standards, taking action where appropriate
- P13 Make decisions on the results provided by monitoring software development activities as appropriate to the organisation
- P14 Make recommendations to improve the effectiveness and quality of software development activities within an organization
- P15 Apply lessons learned from prior experience in IT software development assignments

Manage external providers of software development services

You must be able to:

- P16 Establish effective relationships with external providers of software development services
- P17 Negotiate effectively with external providers of software development services in line with organisational policies and procedures
- P18 Agree contractual arrangements with external providers of software development services

Knowledge and understanding

You need to know and understand:

Design and develop the software development infrastructure

- K1 Design and implement and maintain strategy and policies
- K1.1 Relating to software development activities and their deliverables
- K1.2 To ensure the alignment of software development activities and their deliverables with all relevant legislation, regulations and external standards
- K2 Develop software that takes account of the processing and functional needs specified within logical and physical software design deliverables

Manage software development projects and programmes

You need to know and understand:

- K3 What are the potential implications of failings in integrity, confidentiality and information security during software development activities
- K4 Agree how the information technology system will be integrated and implemented with sponsors and stakeholders during software development
- K5 Identify what actions may be taken in the event of software development activities not supporting the business needs as reflected in software design deliverables
- K6 Identify what actions may be taken in the event of software deliverables failing to operate as required to support the business needs
- K7 Manage changes to business requirements through change control mechanisms during software development activities
- K8 Identify factors external to the organisation in software development activities
- K9 Be accountable for aligning software development activities with other solution development and implementation activities
- K10 Be accountable for the handover of software

You need to know and understand:

Manage the software development infrastructure

- K11 What are the potential implications of failings in integrity, confidentiality and information security during software development activities
- K12 Monitor the ratio/percentage of errors in software produced in relation to the volume/quantity developed
- K13 Review the quality and effectiveness of software development activities
- K14 Be accountable for the quality and effectiveness of software development activities

You need to know and understand:

Manage external providers of software development services

- K15 Identify when and how to use external providers of software development services
- K16 Make decisions on which external suppliers of software development

- services to use
- K17 Monitor the quality and effectiveness of external providers of software development activities
- K18 Manage relationships with external providers offering software development services
- K19 Analyse the results gained from monitoring the quality and effectiveness of external providers of software development activities
- K20 Negotiate and liaise with external providers of software development services

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